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EXTENDED REPORT

The incidences of and consultation rate for lower extremity complaints in general practice

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Objective: To estimate the incidence and consultation rate of lower extremity complaints in general practice.

Methods: Data were obtained from the Second Dutch National Survey of General Practice, in which 195 general practitioners (GPs) in 104 practices recorded all contacts with patients during 12 consecutive months in computerised patient records. GPs classified the symptoms and diagnosis for each patient at each consultation according to the International Classification of Primary Care (ICPC). Incidence densities and consultation rates for different complaints were calculated.

Results: During the registration period 63.2 GP consultations per 1000 person-years were attributable to a new complaint of the lower extremities. Highest incidence densities were seen for knee complaints: 21.4 per 1000 person-years for women and 22.8 per 1000 person-years for men. The incidence of most lower extremity complaints was higher for women than for men and higher in older age.

Conclusions: Both incidences of and consultation rates for lower extremity complaints are substantial in general practice. This implies a considerable impact on the workload of the GP.

Complaints of the lower extremities are a serious problem because of their high prevalence and substantial impact on functional disability, health care costs, sick leave, and work disability.^{1–4} A recent survey among the Dutch general population reported a 12 month period prevalence for hip pain of 12.8%, for knee pain of 21.9%, for ankle pain of 9.2%, and for foot pain of 9.4%. Roughly between 30% and 40% of people reporting these complaints during the preceding year indicated that they had contacted their general practitioner (GP) for these complaints.⁵

Despite the high prevalence of lower extremity complaints in the general population, detailed information on the number of GP consultations attributable to these complaints is sparse. Previous studies refer either to musculoskeletal complaints in general^{6–8} or describe the incidences and prevalences six or more years ago.^{9–10}

There is a need for information on the incidence of and consultation rate for lower extremity complaints. First, the incidence of lower extremity complaints in general practice informs us about the burden of these complaints in the general population—that is, the number of people with new lower extremity complaints that are serious, painful, or troublesome enough to seek medical care. In the Netherlands, nearly every citizen is registered in the practice of a GP. An important feature of the Dutch health care system is that patients first have to see their GP before going to a specialist. The GP acts as a gatekeeper in the health care system. Referrals to the second or third level of care can, in principle, only be made by the GP. Therefore, GP consultation rates provide a good representation of the number of people seeking medical care.

Second, data about the consultation rate for lower extremity complaints help to identify the patient categories that are responsible for the GP workload caused by these complaints. This information can be used to estimate the demand for health care for lower extremity complaints in general practice, and the need for education of medical students and GPs regarding these complaints. As the

population is aging, the education of students and GPs may need some future adaptation to cover in more depth the complaints mostly present in older adults. Only one study has presented information on the number of patients seeking medical care because of musculoskeletal complaints in relation to anatomical location, age, and sex,⁶ but this study was carried out in rural districts in Finland. The results, therefore, may not be easily transferred to more densely populated areas in industrialised countries.

The large majority of the Dutch GPs use computerised patient records. These records provide an excellent opportunity to study the occurrence of complaints of interest in general practice. In 2001 a large survey was conducted among 195 GPs in the Netherlands (Second Dutch National Survey of General Practice).^{11–12} Recently the incidences and prevalences of upper extremity complaints have been published.¹³ The aim of our study was to use the results of this large survey to examine the current incidence of and consultation rates for lower extremity complaints in Dutch general practice.

METHODS

Design

The data used in this study originate from the second Dutch National Survey of General Practice carried out by the Netherlands Institute for Health Services Research in cooperation with the National Information Network of General Practice in 2001.¹² For this survey 195 GPs in 104 practices recorded data about all contacts with patients during 12 consecutive months. A validation study was carried out in which all participating GPs were asked to code 30 paper “case vignettes”. The percentage of agreement was 81%.¹⁴

The participating GPs were distributed all over the Netherlands. They formed a representative sample of the population of all GPs in the Netherlands according to age and

Abbreviation: ICPC, International Classification of Primary Care

Table 1 Incidences of lower extremity complaints in general practice

ICPC*	Incidence (95% CI) (per 1000 person-years)					
	Health insurance		Sex		Total	
	Public	Private	Men	Women	Men	Women
L13	5.8	(5.5 to 6.1)	4.4†	(4.1 to 4.8)	3.8	(3.6 to 4.1)
L14	10.1	(9.7 to 10.5)	6.3†	(5.9 to 6.7)	7.3	(6.9 to 7.6)
L15	15.5	(15.0 to 16.0)	11.9†	(11.3 to 12.5)	14.2	(13.7 to 14.8)
L16	3.9	(3.6 to 4.1)	2.6†	(2.4 to 2.9)	3.3	(3.1 to 3.6)
L17	15.1	(14.7 to 15.6)	10.9†	(10.3 to 11.5)	11.5	(11.0 to 11.9)
L77	8.2	(7.8 to 8.5)	6.4†	(6.0 to 6.8)	7.3	(6.9 to 7.7)
L78	3.8	(3.6 to 4.1)	3.2†	(2.9 to 3.5)	4.0	(3.7 to 4.3)
L89	1.0	(0.9 to 1.1)	0.8†	(0.7 to 1.0)	0.6	(0.5 to 0.8)
L90	1.6	(1.5 to 1.8)	1.1†	(1.0 to 1.3)	0.9	(0.8 to 1.0)
L96	1.4	(1.3 to 1.6)	1.2†	(1.0 to 1.4)	1.7	(1.5 to 1.9)
L97	3.1	(2.8 to 3.3)	2.8†	(2.5 to 3.1)	2.9	(2.7 to 3.1)
Total	69.5	(68.5 to 70.5)	51.7†	(50.5 to 52.9)	57.5	(56.4 to 58.5)
					69.0†	(67.8 to 70.1)
						(62.5 to 64.0)

*International Classification of Primary Care.

†Significant different incidence between public and private insurance or between men and women ($p < 0.01$).
CI, confidence interval.**Table 2** Consultation rates for lower extremity complaints in general practice

ICPC*	Consultation rate (95%CI) (per 1000 registered patients)					
	Health insurance		Sex		Total	
	Public	Private	Men	Women	Men	Women
L13	14.8	(14.3 to 15.2)	10.3†	(9.8 to 10.9)	8.7	(8.3 to 9.1)
L14	22.9	(22.4 to 23.5)	12.7†	(12.1 to 13.3)	15.2	(14.7 to 15.8)
L15	34.1	(33.4 to 34.8)	23.7†	(22.9 to 24.6)	28.9	(28.1 to 29.6)
L16	7.9	(7.5 to 8.2)	5.1†	(4.7 to 5.5)	6.2	(5.8 to 6.6)
L17	27.9	(27.3 to 28.6)	19.3†	(18.5 to 20.0)	20.0	(19.4 to 20.7)
L77	15.9	(15.4 to 16.4)	12.6†	(12.0 to 13.2)	13.9	(13.4 to 14.4)
L78	7.0	(6.7 to 7.4)	5.4†	(5.0 to 5.8)	6.9	(6.5 to 7.3)
L89	7.3	(6.9 to 7.6)	4.9†	(4.5 to 5.3)	3.8	(3.5 to 4.1)
L90	10.5	(10.1 to 10.9)	6.0†	(5.5 to 6.4)	4.5	(4.2 to 4.8)
L96	3.4	(3.2 to 3.7)	2.8†	(2.5 to 3.1)	3.9	(3.6 to 4.1)
L97	7.6	(7.3 to 8.0)	5.9†	(5.5 to 6.4)	6.4	(6.0 to 6.8)
Total	159.3	(157.9 to 160.8)	108.7†	(107.0 to 110.4)	118.4	(116.9 to 119.8)
					164.5†	(162.9 to 166.2)
						(140.5 to 142.7)

*International Classification of Primary Care.

†Significant different consultation rate between public and private insurance or between men and women ($p < 0.01$).
CI, confidence interval.

sex of the GP, region, and location of practice (rural/urban; deprived area). Only the percentage of solo practices was smaller than in the whole population of Dutch GPs.¹² The total practice population consisted of 391 294 patients at the start of the survey. The population characteristics corresponded very well with the Dutch population as a whole according to age, sex, and type of health care insurance.¹²

Data collection

All contacts were recorded in computerised patient records. The GPs classified the complaints or diagnoses of each patient at each consultation according to the International Classification of Primary Care (ICPC).¹⁵ This classification is designated by the World Organisation of Family Doctors (WONCA) as the ordering principle of the family practice domains.¹⁵ The ICPC classification consists of a letter followed by a number. The letter stands for an organ system (for example, L = musculoskeletal system) and the number stands for different components—that is, symptoms/complaints (codes 1–29), or diagnosis/diseases (codes 70–99). A selection of ICPC codes out of the L chapter was made to identify patients with lower extremity complaints (see the appendix). Sixty one of the 104 general practices included in the study were already members of the National Information Network of General Practice before the start of the Second Dutch National Survey and thus were used to ICPC coding. All GPs were offered a course in the use of ICPC classification before the start of the study. The GP recorded whether the patient's visit concerned a new complaint, and whether it was the first or a subsequent consultation of an episode. A complaint was considered to be new if the GP regarded it as being separate from earlier problems.

Statistical analyses

To determine incidence densities we calculated the number of patients with a new lower extremity complaint in the study year, divided by the sum of person-years at risk. The incidence densities were calculated for each ICPC code separately. Patients contributed person-years to the denominator from the start of the registration period until they consulted their GP with a new complaint in the lower extremity, after which they were no longer at risk for that specific complaint. However, they were still considered to be at risk for other lower extremity complaints (other ICPC codes). Patients who did not consult the GP for a complaint of the lower extremity contributed one person-year to the denominator. The incidence densities were calculated per 1000 person-years stratified by age, sex, and type of health care insurance. As some complaints were coded by the GP as complaints (for example, L15) and others as diagnoses (for example, L90), incidences refer to both complaints and diagnoses, depending on the coding of the GP.

The consultation rate for lower extremity complaints was calculated as the total number of consultations for (new and chronic) lower extremity complaints divided by the population at risk (presented per 1000 registered patients). For the determination of the population at risk we used the so called mid-time population (that is, the mean of the total of registered persons at the start of the registration period and the total of registered persons at the end of the registration period). Finally, we calculated the number of patients who consulted their GP at least once in the study year for a lower extremity complaint divided by the population at risk.

The way people are insured may have an effect on the number of GP consultations. In the Netherlands, persons whose annual salary is below a statutory ceiling and all recipients of social security benefits have a public, compulsory health care insurance. About 64% of the Dutch population have a public insurance and about 36% have a

private health care insurance.¹⁶ Patients with public health care insurance do not pay any fee directly for consulting a GP, while private health care insurance policies usually require some co-payments for medical care. People with public health care insurance consult the GP more often than people with a private health care insurance; it is expected that this will also be true for lower extremity complaints.

Group comparisons (that is, men versus women; public versus private health insurance) were made using the binomial test procedure, with the significance level set at 0.01. Because of the large sample size we were able to use a normal approximation to the binomial distribution. We tested the null hypothesis that the two proportions were equal.

RESULTS

Eight of 104 practices had to be excluded from the analysis. Two had not recorded any contacts, one had registered for only three months of the 12 months registration period, and five had to be excluded because of the poor quality of their registration (they had registered only a part of the contacts or had not sufficiently coded the contacts according to the ICPC). The total number of patients registered in the remaining 96 general practices (that is, the mid-time population) was 375 899.

During the registration period the GPs were consulted 53 233 times for lower extremity complaints; thus the consultation rate was 142 per 1000 registered persons. This means that in a general practice serving an average population of 2500 patients, approximately 354 consultations each year concern lower extremity complaints. In all, 22 264 patients—approximately 6% of all people registered—consulted their GP at least once in the study year with a complaint about the lower extremities.

The incidences and consultation rates of lower extremity complaints per ICPC code are presented in tables 1 and 2. During the registration period, 63.2 GP consultations per 1000 person-years were attributable to a new complaint of the lower extremities. The incidences and the consultation rates of lower extremity complaints were much higher for patients with public health care insurance than for privately insured patients (incidence 69.5 v 51.7, $p < 0.01$; consultation rate 159.3 v 108.7, $p < 0.01$). When we took the incidences of complaints and diagnoses of the same anatomical location together (that is, for hip complaints L13 and L89 were taken together; for ankle, foot, and toe complaints L16, L17 and L77 were taken together; and for knee complaints L15, L78, L90, L96, and L97 were taken together), it was apparent that the most common lower extremity complaints in general practice related to the knee, for both men (22.8 per 1000 person-years) and women (21.4 per 1000 person-years).

Table 3 shows sex and age specific incidences. The incidence of most lower extremity complaints was higher for women than for men ($p < 0.01$), with only a few exceptions. The incidence of knee symptoms, sprains of the ankle/foot, sprains of the knee, and acute meniscus/ligament, knee was higher in men in most of the younger age categories ($p < 0.01$). Incidences also varied according to age. Under the age of 30 a high incidence was seen for knee and ankle complaints, especially in men. Above the age of 50, a high incidence was seen for knee and foot/toe complaints. Osteoarthritis of the knee and hip were incident in patients above the age of 40. Knee osteoarthritis had a higher incidence than hip osteoarthritis, especially in women.

The total incidence of lower extremity complaints (all ICPC codes taken together) varied according to sex and age (fig 1). In all, 55% of the patients with a complaint of the lower extremities were women. The age related patterns were different for men and women. In females the incidence

Table 3 Incidences (per 1000 person-years) of lower extremity complaints in general practice by ICD codes, age groups, and sex

ICPC-diagnosis	Complaint/ diagnosis	Sex	Age group (years) (95% CI)									
			0 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+	
L13	Hip complaints	M	4.0 (3.2 to 4.8)	2.1 (1.5 to 2.7)	1.6 (1.1 to 2.1)	2.2 (1.7 to 2.8)	3.2 (2.5 to 3.8)	5.6 (4.7 to 6.5)	5.9 (4.7 to 7.1)	9.0 (7.1 to 10.9)	16.0 (11.9 to 20.1)	
		F	4.9 (3.9 to 5.8)	2.2 (1.6 to 2.8)	3.6 (2.9 to 4.4)†	4.0 (3.3 to 4.6)†	6.3 (5.4 to 7.2)†	8.6 (7.4 to 9.8)†	13.1 (11.4 to 14.9)†	15.4 (13.3 to 17.5)†	18.3 (15.3 to 21.4)	
L14	Leg/high complaints	M	4.1 (3.3 to 4.9)	5.1 (4.2 to 6.0)	5.2 (4.3 to 6.1)	5.1 (4.3 to 5.8)	8.1 (7.0 to 9.1)	9.4 (8.2 to 10.6)	12.5 (10.7 to 14.2)	13.8 (11.4 to 16.1)	15.5 (11.5 to 19.5)	
		F	4.2 (3.4 to 5.1)	4.3 (3.4 to 5.1)	6.2 (5.2 to 7.1)	7.4 (6.4 to 8.3)†	10.5 (9.3 to 11.7)†	14.4 (12.8 to 15.9)†	17.3 (15.3 to 19.3)†	22.1 (19.6 to 24.6)†	25.3 (21.7 to 28.9)	
L15	Knee complaints	M	3.6 (2.8 to 4.3)	17.0 (15.3 to 18.6)	15.5 (14.0 to 17.0)	15.1 (13.7 to 16.4)	16.9 (15.4 to 18.4)	17.8 (16.1 to 19.4)	14.3 (12.4 to 16.1)	12.0 (9.8 to 14.1)	9.9 (6.7 to 13.1)	
		F	2.7 (2.1 to 3.4)	16.7 (15.0 to 18.3)	10.8 (9.6 to 12.1)†	10.0 (8.9 to 11.1)†	15.5 (14.1 to 16.9)	19.5 (17.7 to 21.3)	18.9 (16.8 to 21.0)†	24.0 (21.4 to 26.7)†	21.4 (18.1 to 24.7)	
L16	Ankle complaints	M	2.4 (1.8 to 3.0)	5.3 (4.4 to 6.2)	4.8 (3.9 to 5.6)	2.9 (2.3 to 3.5)	3.2 (2.6 to 3.9)	2.4 (1.8 to 3.0)	2.5 (1.7 to 3.3)	3.1 (2.0 to 4.3)	1.9 (0.5 to 3.3)	
		F	1.9 (1.3 to 2.5)	5.0 (4.1 to 5.9)	3.5 (2.8 to 4.2)	3.4 (2.7 to 4.0)	2.9 (2.3 to 3.5)	3.8 (3.0 to 4.6)†	3.7 (2.8 to 4.7)	4.4 (3.3 to 5.6)	4.2 (2.7 to 5.7)†	
L17	Foot/heel complaints	M	9.2 (8.0 to 10.4)	16.2 (14.6 to 17.8)	9.7 (8.5 to 10.9)	8.4 (7.4 to 9.4)	10.9 (9.7 to 12.1)	12.8 (11.4 to 14.3)	12.5 (10.8 to 14.3)	14.8 (12.4 to 17.2)	17.7 (13.4 to 22.0)	
		F	8.5 (7.2 to 9.7)	14.3 (12.7 to 15.8)	11.8 (10.5 to 13.1)	14.3 (13.0 to 15.7)†	15.5 (14.0 to 16.9)†	22.6 (20.6 to 24.5)†	21.7 (19.4 to 23.9)†	22.6 (20.1 to 25.2)†	19.4 (16.3 to 22.6)	
L77	Sprain of ankle/foot	M	3.6 (2.8 to 4.3)	15.4 (13.8 to 17.0)	12.1 (10.7 to 13.4)	8.3 (7.3 to 9.3)	6.5 (5.5 to 7.4)	4.0 (3.3 to 4.8)	2.2 (1.4 to 2.9)	1.9 (1.0 to 2.7)	1.6 (0.3 to 3.0)	
		F	3.8 (3.0 to 4.6)	16.4 (14.7 to 18.0)	8.8 (7.7 to 9.9)†	7.6 (6.6 to 8.5)	7.4 (6.4 to 8.4)	7.5 (6.4 to 8.6)	6.3 (5.0 to 7.5)†	4.1 (3.0 to 5.2)†	3.7 (2.3 to 5.1)	
L78	Sprain/strains of knees	M	0.9 (0.54 to 1.33)	6.0 (5.0 to 7.0)	5.5 (4.6 to 6.5)	4.5 (3.7 to 5.2)	4.5 (3.7 to 5.2)	3.4 (2.7 to 4.2)	3.0 (2.1 to 3.8)	2.8 (1.8 to 3.9)	2.2 (0.7 to 3.7)	
		F	0.4 (0.1 to 0.7)	3.7 (2.9 to 4.5)†	4.0 (3.2 to 4.7)†	2.6 (2.0 to 3.2)†	3.6 (2.4 to 4.3)	3.5 (2.8 to 4.3)	3.9 (2.9 to 4.8)	4.6 (3.4 to 5.8)	3.4 (2.1 to 4.7)	
L89	Osteoarthritis hip	M	0	0	0	0	0.3 (0.1 to 0.5)	1.1 (0.7 to 1.6)	2.3 (1.5 to 3.1)	3.6 (2.4 to 4.7)	4.1 (2.0 to 6.2)	
		F	0	0	0	0	0.3 (0.1 to 0.5)	1.8 (1.2 to 2.3)	4.4 (3.4 to 5.5)†	5.8 (4.5 to 7.1)	5.0 (3.4 to 6.6)	
L90	Osteoarthritis knee	M	0	0	0	0.1 (-0.0 to 0.1)	0.5 (0.3 to 0.8)	1.6 (1.1 to 2.0)	2.8 (1.9 to 3.6)	4.6 (3.2 to 6.0)	6.6 (4.0 to 9.2)	
		F	0	0	0	0.1 (-0.0 to 0.2)	0.5 (0.2 to 0.8)	2.5 (1.8 to 3.1)	5.6 (4.5 to 6.8)†	9.8 (8.1 to 11.5)†	12.7 (10.1 to 15.2)†	
L96	Acute meniscus/ligament knee	M	0.1 (-0.03 to 0.2)	1.2 (0.8 to 1.7)	2.0 (1.4 to 2.5)	2.6 (2.0 to 3.1)	2.4 (1.8 to 2.9)	2.3 (1.7 to 2.9)	1.1 (0.6 to 1.6)	0.7 (0.2 to 1.3)	0	
		F	0	0.8 (0.5 to 1.2)	1.0 (0.6 to 1.4)†	1.0 (0.6 to 1.4)†	1.1 (0.7 to 1.5)†	1.8 (1.3 to 2.4)	1.6 (1.0 to 2.3)	0.7 (0.2 to 1.2)	0.3 (-0.1 to 0.6)	
L97	Chronic int knee derangement	M	0.4 (0.1 to 0.6)	4.3 (3.4 to 5.1)	3.5 (2.7 to 4.2)	3.8 (3.1 to 4.4)	3.3 (2.6 to 3.9)	3.2 (2.5 to 3.9)	2.4 (1.6 to 3.1)	1.0 (0.4 to 1.7)	0.8 (-0.1 to 1.7)	
		F	0.6 (0.3 to 0.9)	7.0 (5.9 to 8.1)†	3.3 (2.6 to 3.9)	2.9 (2.3 to 3.5)	3.1 (2.5 to 3.8)	3.4 (2.7 to 4.2)	2.5 (1.7 to 3.2)	1.4 (0.8 to 2.0)	0.7 (0.1 to 1.3)	

*International Classification of Primary Care.

†Significantly different incidence between men and women ($p < 0.01$).

CI, confidence interval; F, female; int, internal; M, male.

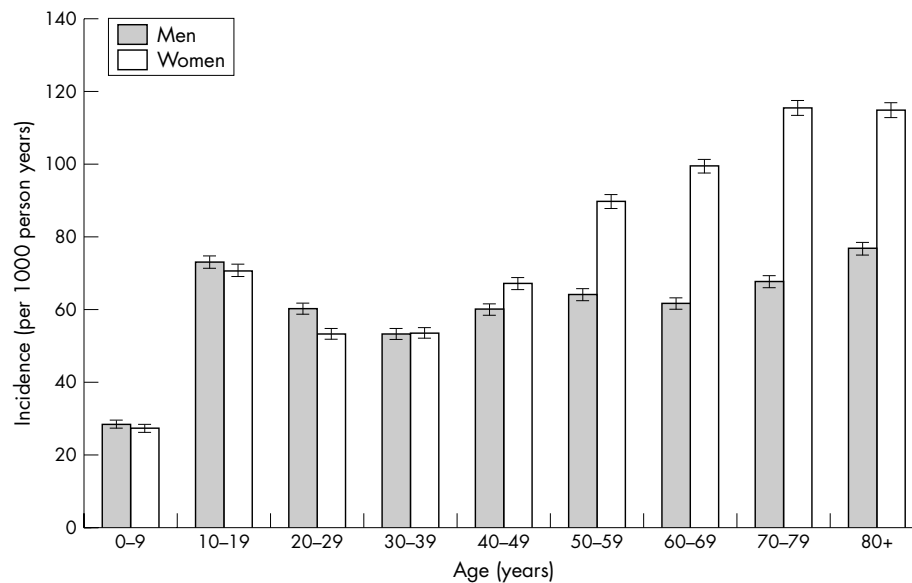


Figure 1 Sex and age specific incidences of lower extremity complaints in general practice.

increased with age, with an additional peak in the age group 10–19. In males the incidence was high in the age group of 10–19, then decreased and increased slightly again from the age group 60–69. In the age groups 50–59 and older, the incidence in women was much higher than in men.

DISCUSSION

In this study, the incidence of and consultation rate for lower extremity complaints in general practice has been estimated. The results show that the incidence was high: 63.2 per 1000 person-years (57.5 for men and 69.0 for women). Highest incidences were seen for patients with knee complaints: 21.4 per 1000 person-years for women and 22.8 per 1000 person-years for men. The incidence of lower extremity complaints in the general population might even be higher, as there may also be a hidden burden of lower extremity complaints, especially among the elderly. Findings from a large population based survey show that 30–40% of those report lower extremity complaints reported contact with a GP.⁵

Some lower extremity complaints may have been missed because they were coded as general musculoskeletal complaints (for example, L18 (muscle pain/fibrositis), L19 (other symptoms, multiple/unspecified muscle), L20 (symptoms multiple/unspecified joints), and L29 (other and multiple musculoskeletal symptoms)). These ICPC codes were not included in this study. Therefore, the incidence rates might have been slightly underestimated.

The incidences for the various complaints varied according to age (table 3). Both in men and women ankle complaints were higher at a younger age, and leg, knee, hip, and foot/toe complaints were higher at an older age, with an additional peak for knee complaints at younger age, especially in males. These differences can be explained by the fact that at a younger age most complaints are related to injuries acquired during exercise or sports (meniscal injuries and ankle sprains). The high incidence of knee complaints in older women, may reflect degenerative joint disease that has not yet been coded as such. GPs may have coded those first presentations as hip or knee complaints instead of diagnosing these complaints.

Consultation rates for lower extremity complaints were also high. GPs were visited 142 times per 1000 registered persons in the study year. Approximately 6% of all people

registered, consulted their GP at least once in the study year with a complaint relating to the lower extremities. These figures indicate a considerable impact of lower extremity complaints on the workload of the GP. This is in contrast to the small amount of time that is dedicated to these problems during the education of medical students and GPs. As the population is aging, the education of students and GPs may need adaptation in the future to take account of lower extremity complaints, which are mostly present in older women.

The findings of our study showed that consultation rates were somewhat lower than the self reported consultation rates in the population based study by Picavet *et al.*⁵ in which 6–9% of the responders reported contact with their GP for lower extremity complaints. An explanation for this difference could be an overestimation by the patients in the study by Picavet. Furthermore, pain prevalences may be slightly overestimated in this population based study.⁵ Picavet *et al.*⁵ have provided an overview of the prevalence of musculoskeletal pain based on population surveys. The prevalence of lower extremity complaints in these studies varied from 10% to 33% for knee pain, and from 5% to 22% for hip pain. Our consultation rates (30% for knee pain and 13% for hip pain) fit within these ranges.

As expected, the type of health care insurance had an effect on the incidence and consultation rate: patients with a public health care insurance consulted their GP more often for lower extremity complaints and had a higher incidence of these complaints than patients with private health care insurance. This may be explained by the fact that private health care insurance policies usually require some co-payments for medical care and this may be a threshold for GP consultation. As type of health care insurance depends on income level, it may be used as a proxy measure of socioeconomic status. Persons with lower socioeconomic status usually have a worse overall health^{17–18} and suffer more often from musculoskeletal pain.^{19–21} They have been shown to consult the general practitioner more often than those of high socioeconomic status.^{22–23} Furthermore, older patients more often have a public health insurance and have a higher incidence of complaints. Thus the higher incidence and consultation rate may (at least partly) reflect worse health and older age in patients with a public health care insurance.

The incidences of our study can be compared to incidences from the first Dutch National Survey of General Practice in the Netherlands. In that study, 161 GPs registered every contact during three consecutive months in 1987.²⁴ Although the design of the second National Survey resembles the first, there are several differences. First, in the first National Survey the contacts were recorded on standardised forms instead of using computerised medical records. Second, the morbidity data were not coded by the GP, but afterwards by trained personnel. For this classification a modified version of the International Classification of Primary Care (ICPC codes) was used. A comparison of similar ICPC codes reveals higher incidence rates for codes representing complaints and lower rates for codes representing diagnoses in the second National Survey. This may indicate that the trained personnel in the first National Survey more often used codes representing diagnoses instead of complaints. The total incidence of lower extremity complaints presented in the first national survey was 54 per 1000 person-years,⁹ which is lower than the incidence found in this second National Survey (63 per 1000 person-years). We may conclude that the incidence of lower extremity complaints has increased over the past 13 years in the Netherlands. This increase may be explained by the aging of the population in Western countries. Most lower extremity complaints are more common among older people, and with a growing population of older people the incidences are expected to rise further in the near future.

It is difficult to compare our results with those from other nationwide studies. Our consultation rates were comparable for hip complaints but somewhat lower for knee complaints than the consultation rates found in a Finnish national study based on data collected in 1988.⁶ That study found consultation rates for hip complaints of 30 for women and 19 for men, as compared with 27 for women and 20 for men in our study, but consultation rates for knee complaints of 79 for women and 66 for men, compared with 62 for women and 56 for men in our study. We have no reason to expect a difference in the prevalence of knee complaints between the Netherlands and Finland, not for a decrease in knee complaints over time; thus we think that this difference probably reflects differences in the coding of knee complaints. Unfortunately, we were not able to make a satisfactory comparison of our data with the results from the National Study 1991–1992 from the United Kingdom,⁸ because they did not present incidence and prevalence rates by anatomical region.

The incidences and consultation rates found in the present study provide up to date data on the number of people with lower extremity complaints that are serious, painful, or annoying enough to seek medical care. These data will be of use to clinicians, policy makers, and researchers in the musculoskeletal field. The figures show that these numbers are substantial. These findings are in agreement with the attempt that is being made to increase the attention paid by GPs to this kind of complaint.²⁵ The Western population is aging and more people suffer from lower extremity complaints, especially knee pain and osteoarthritis.²⁶ As knee pain has a substantial impact on people's lives and on their use of primary health care,²⁷ the need to identify practical and effective means of reducing this burden should be a priority for future research. Such research should be multidisciplinary and translational, involving GPs along with rheumatologists, orthopaedic surgeons, specialists in biomechanics, and basic researchers.

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APPENDIX

INTERNATIONAL CLASSIFICATION OF PRIMARY CARE (ICPC) CODES, CHAPTER L: MUSCULOSKELETAL

(ICPC codes selected for inclusion in the present study are in bold)

- L01 Neck symptoms/complaints
- L08 Shoulder symptoms/complaints
- L09 Arm symptoms/complaints
- L10 Elbow symptoms/complaints
- L11 Wrist symptoms/complaints
- L12 Hand/finger symptoms/complaints
- **L13 Hip symptoms/complaints**
- **L14 Leg/thigh symptoms/complaints**
- **L15 Knee symptoms/complaints**
- **L16 Ankle symptoms/complaints**
- **L17 Foot/toe symptoms/complaints**
- L18 Muscle pain/fibrositis
- L19 Other symptoms, multiple/unspecified muscle
- L20 Symptoms multiple/unspecified joints
- L28 Disability/impairment
- L29 Other and multiple musculoskeletal symptoms
- **L77 Sprain of ankle/foot**
- **L78 Sprains/strains of knees**
- L79 Sprains/strains other joints
- L80 Dislocations
- L81 Other injury musculoskeletal
- L83 Syndrome of cervical spine
- L84 Osteoarthritis spine
- L85 Acquired deformities of spine
- L87 Ganglion joint/tendon
- L88 Rheumatoid arthritis
- **L89 Osteoarthritis hip**
- **L90 Osteoarthritis knee**
- L91 Other osteoarthritis
- L92 Shoulder syndrome
- L93 Tennis elbow
- L94 Osgood-Schlatter, osteochondritis
- L95 Osteoporosis
- **L96 Acute meniscus/ligament knee**
- **L97 Chronic internal knee derangement**
- L98 Acquired deformities limbs
- L99 Other musculoskeletal/connective disorder

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